

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A receiver for a communication system including a plurality of base stations and a plurality of receivers, each base station transmitting a respective CDMA signal including data intended for each of a set of one or more of the receivers, the data intended for each of the receivers being encoded in the CDMA signal using a respective spreading code for that receiver, the receiver including:

reception means for receiving a signal including CDMA signals having a processing gain of  $N$ , ~~said reception means:~~

~~generating  $G$  measurements in each chip duration of the CDMA signal,~~  
~~where  $G$  is an integer;~~

~~each of said set of weights consisting of  $G(2M+1)$  weights, where  $M$  is an integer;~~

~~said combined signal being a sum over the branch processing means of the product of:~~

~~(i) a vector derived from said spreading code for the receiver and the scrambling code of the corresponding base station;~~

~~(ii) a data matrix composed of said measurements and having  $G(2M+1) \times N$  components; and~~

~~(iii) the set of weights for the respective branch processing means;~~

a plurality of branch processing means, the reception means being capable of transmitting the received signal to each branch processing means, each branch processing means

corresponding to a respective one of the base stations and arranged to modify the received signal by the operations of:

(i) data equalization, based on a respective filter using a respective set of weights;

and

(ii) decoding the spreading code for the receiver;

decision means for using an output of each branch processing means to generate an error signal and an estimate signal indicative of the data in the received signal intended for the receiver; and

adaptation means for modifying the respective set of weights using the error signal

wherein the CDMA signal transmitted by each base station is encoded using a respective scrambling code for that base station, and said decoding uses the scrambling code of the corresponding base station,

wherein said decision means combines the outputs of the plurality of branch processing means into a combined signal,

wherein said reception means:

generates  $G$  measurements in each chip duration of the CDMA signal,

where  $G$  is an integer;

each of said set of weights consisting of  $G(2M+1)$  weights, where  $M$  is an integer;

said combined signal being a sum over the branch processing means of the product of:

(i) a vector derived from said spreading code for the receiver and a scrambling code of the corresponding base station;

- (ii) a data matrix composed of said measurements and having  $G(2M+1) \times N$  components; and
- (iii) the set of weights for the respective branch processing means.

2. – 4. (Canceled)

5. (Previously Presented)                      A receiver according to claim 1 in which the detection means is arranged to generate said error signal as the difference between said combined signal and a correction signal.

6. (Original)                      A receiver according to claim 5 in which said detection means includes a non-linear function unit for generating said correction signal from said combined signal using a non-linear function.

7. (Original)                      A receiver according to claim 5 in which the detection means includes a training sequence input for receiving a training sequence, and a switch for selectively deriving said correction signal as a signal input to said training sequence input or the output of the decision means.

8. (Currently Amended)                      A method of extracting data intended for a first user from one or more CDMA signals, each broadcast by a respective base station, each CDMA

signal including data intended for the first user and data intended one or more other users, the data for each user being encoded using a respective spreading code, the method including:

receiving a signal including the one or more CDMA signals wherein said CDMA signals have a processing gain of  $N$ ,

~~said step of receiving a signal includes generating  $G$  measurements in each chip duration of the CDMA signal, where  $G$  is an integer;~~

~~each of said set of weights comprises  $G(2M+1)$  weights, where  $M$  is an integer;~~

and

~~said combined signal is a sum over the processing branches of the product of:~~

~~(i) a vector derived from said spreading code for the first receiver and the scrambling code of the corresponding base station;~~

~~(ii) a data matrix composed of said measurements and having  $(G(2M+1) \times N$  components, and~~

~~(iii) the set of weights for the respective processing branch;~~

transmitting the received signal along a plurality of processing branches corresponding to different respective base stations;

modifying the received signal in each processing branch by the operations of:

(i) data equalization in respect of the corresponding base station, based on a respective set of weights; and

(ii) decoding, using the spreading code for the first user;

using an output signal generated from the outputs of each processing branch to derive an error signal and an estimate signal indicative of the data in the received signal intended for the

first user; and

modifying each respective set of weights using the error signal,

wherein the CDMA signal transmitted by each base station is encoded using a respective scrambling code and said decoding uses the scrambling code of the corresponding base station,

wherein said output signal comprises a combined signal generated by combining the outputs of the plurality of processing branches,

wherein said step of receiving a signal includes generating  $G$  measurements in each chip duration of the CDMA signal, where  $G$  is an integer;

each of said set of weights comprises  $G(2M+1)$  weights, where  $M$  is an integer;

and

said combined signal is a sum over the processing branches of the product of:

(i) a vector derived from said spreading code for the first receiver and the scrambling code of the corresponding base station;

(ii) a data matrix composed of said measurements and having  $(G(2M+1) \times N)$  components, and

(iii) the set of weights for the respective processing branch.

9. – 11. (Canceled)

12. (Previously Presented)      A method according to claim 8 in which said error signal is the difference between said combined signal and a correction signal.

13. (Original)        A method according to claim 12 further including generating said correction signal from said combined signal using a non-linear function.

14. (Original)        A method according to claim 12 further including deriving said correction signal as a selection from an input training sequence or the estimate signal.

15. - 17. (Canceled)